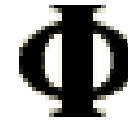




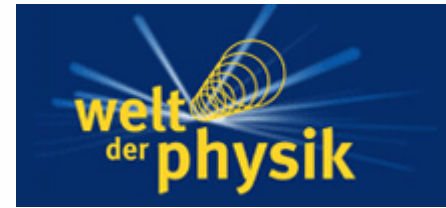
**TECHNISCHE
UNIVERSITÄT
DRESDEN**



Bundesministerium
für Bildung
und Forschung



DPG



Netzwerk Teilchenwelt

EPPCN Meeting Zeuthen

04.05.2010

Thomas Naumann

On behalf of Michael Kobel, TU Dresden & all networkers

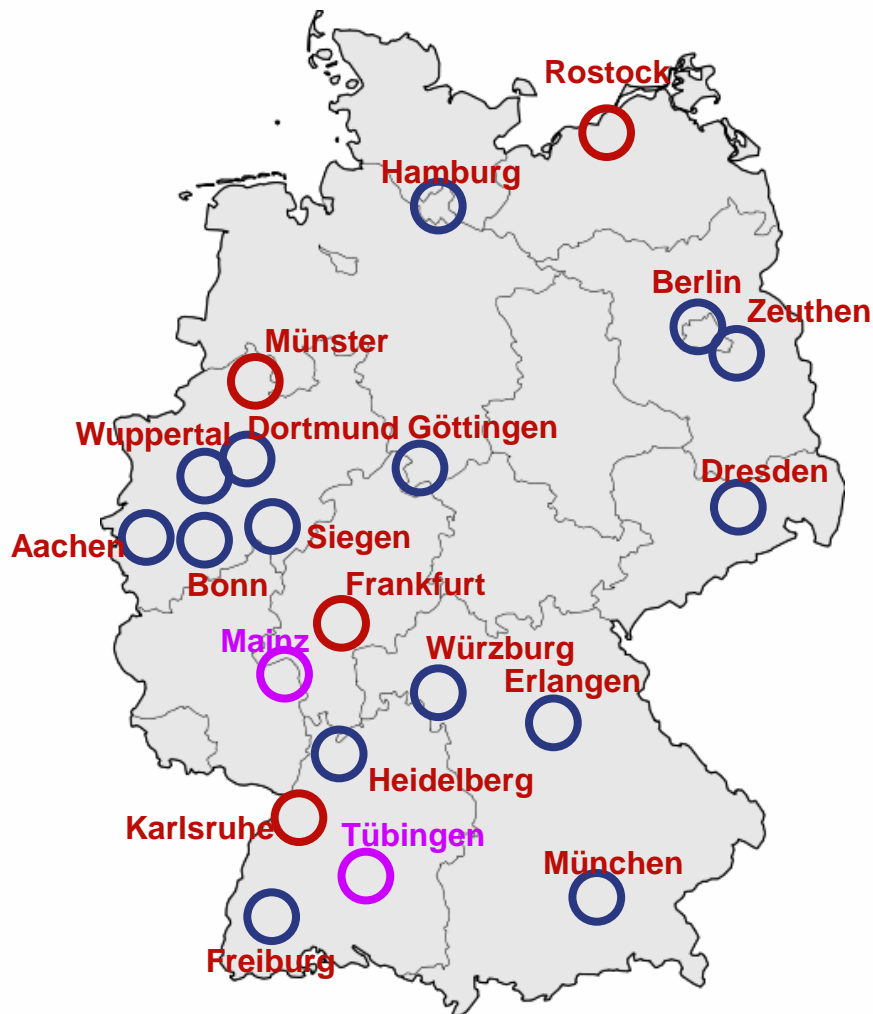
Network Structure

- Idea: Federal minister A.Schavan at opening of Weltmaschine exhibition Oct 08 in Berlin
- **Network between scientists, young people and multipliers for insight in scientific research in direct contact with CERN**
 - Students as young researchers aged 15-19
 - Multipliers: teachers as working group leaders at school workshop responsables in museums, science centres or school labs
 - **All ~ 20 institutes of (astro)particle physics in**
- **4 central elements**
 - **Local projects** all over the country (national masterclasses and cosmic rays)
 - **On-site experiences** at CERN
 - Development of **context materials**
 - Scientific **evaluation**
- **4 levels** for multipliers and students
 - **Basic level** as introduction
 - **Qualification level** for membership
 - **Advanced level** at CERN
 - **Research level** internships at the institutes



Participating institutes, national masterclasses

Covers most of Germany's states



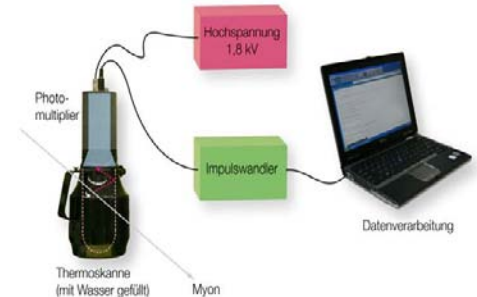
International Masterclasses:
2009: 14 Institutes
2010: +2 Institutes

Network Teilchenwelt
2010: + 4 Institutes

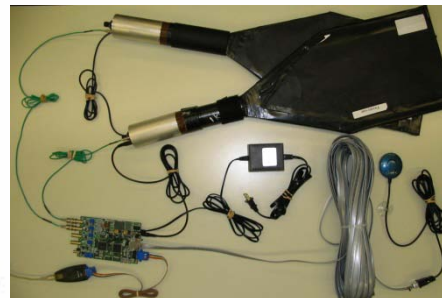
Cosmic ray experiments

DESY (HH, Zeuthen), Erlangen, Göttingen, Karlsruhe, Tübingen, Wuppertal

- **Experiments at school or students at institutes:**
 - Rate of cosmic ray = function (angle, air pressure, time)
 - Wide air showers
 - Lifetime of muons
- **Example detectors (not complete)**
 - **manz:**
Kamiokanne
 - **DESY in Zeuthen:**
Cosmic Trigger Hodoscope
Kamiokanne
QuarkNet Detektor
 - **DESY in Hamburg:**
QuarkNet Detektor
 - ...



Kamiokannen



QuarkNet Detektor



Cosmic Trigger Hodoscope

New local elements

● Events and Projects

● National local masterclasses at schools (or museums, ..)

- ◆ Material provided centrally
- ◆ First (mostly) measurements with LEP events, (also testing LHC upgrade)
- ◆ Later (mostly) measurements with LHC events
- ◆ Already successfully tested 4x in 2009 / 2010 (Dresden, Meißen, Riesa, Oschatz)
→ student teacher thesis Dirk Stumpe, TUD, Aug. 2009
- ◆ aim: ~ 6000 students per year in ~ 200 events

● Cosmic ray experiments (if available, not at all institutes)

- ◆ If portable: at schools
- ◆ Else: at institutes
- ◆ aim: ~ 100 students per year

● Supervised students projects in research level (poss. thesis)

- ◆ aim: ~ 5-10 students per year for 6-12 months at institutes

● Personpower needed per event

- 1 multiplicator (typ: teacher → 5-10 / institute / year)
- 1 scientist (typ: Ph.D. student → 3-4 / institute)
 - ◆ Travel expenses and **small fee** from project

Project Status

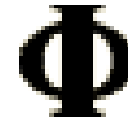
- Funded by BMBF: Jan 2010 – Jan 2013 (740,000 €)
 - September 2008: idea and letter of intent
 - October 2008: press release Min. Schavan (Opening Weltmaschine exhibition)
 - In the following: clarification of boundary conditions for application
 - October 2009: final application to BMBF
 - end November 2009: approval of grant
- LHC start ideal boundary conditions for Kick-Off
- Win-win situation for everybody:
 - Improve public acceptance of fundamental research
 - Spread fascination of modern science
 - Make visible how Germany is profiting from CERN
 - Educate young scientists in outreach and communication
- Expected key elements for success
 - Participation of all 20 institutes
 - Participation of motivated Ph.D. students



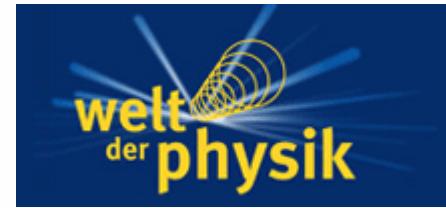
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Official Kickoff Germany: Di 20.4. Masterclass Kreuz Gymnasium Dresden

More information:
website with project description and press release

www.teilchenwelt.de

(preliminary version)

**Kontakt: Projektkoordinatorin
anne.glueck@tu-dresden.de
+49 (0)351 463-33769**



mail@teilchenwelt.de